EPA/AMD/R10-00/038
2000

EPA Superfund
Record of Decision Amendment:

KERR-MCGEE CHEMICAL CORP. (SODA SPRINGS PLANT)
EPA ID: IDD041310707
OU 01
SODA SPRINGS, ID
07/13/2000

DECLARATION FOR THE RECORD OF DECISION

Site Name and Location

Kerr-McGee Superfund Site
Caribou County, Idaho

Statement of Basis and Purpose

This decision document presents the modifications to the remedial action for addressing groundwater contamination at the Kerr-McGee site in Soda Springs, Idaho. The primary purpose of this amendment to the Record of Decision (Amended ROD) is to change the remedy for a portion of the contamination. The change in remedy is for the calcine tailings and roaster reject materials from reuse/recycling to containment. The changed remedy will neither affect the level of environmental protection at the site nor achievement of the performance standards and cleanup levels. All remaining components of the selected remedy, as documented in the September, 1995 ROD (original ROD) will be implemented at the site.

This Amended ROD has been developed in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), 42 U.S.C. Section 9601 et seq., and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. Part 300. This decision is based on the administrative record for this site, updated April, 2000, to include new information generated since the original ROD. The attached index identifies the items which comprise the Administrative Record upon which the modifications to the selected remedy are based. The State of Idaho concurs with these modifications to the selected remedy.

Assessment of the Site

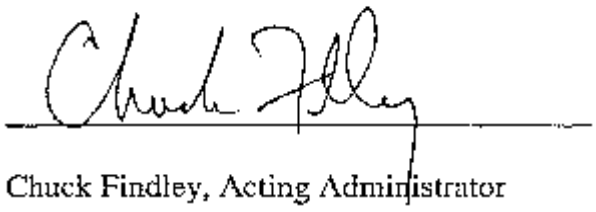
The response action selected in this amended Record of Decision is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment. Such a release or threat of release may present an imminent and substantial endangerment to public health, welfare, or the environment

Declaration

Although this Amended ROD modifies the original remedy selected in the ROD, the modified remedy is considered to be protective of human health and the environment. The selected remedy, as modified, still complies with Federal and State applicable or relevant and appropriate

requirements, is cost effective, and utilizes treatment to the maximum extent practicable.

The proposed changes to the remedy do not negate the need for a five year review. Hazardous substances will remain on the site underneath a cap and therefore a review will be conducted within five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment. The first five, year review is scheduled to occur in 2002.



Chuck Findley, Acting Administrator
Region 10

7-13-06

Date

requirements, is cost effective, and utilizes treatment to the maximum extent practicable.

The proposed changes to the remedy do not negate the need for a five year review. Hazardous substances will remain on the site underneath a cap and therefore a review will be conducted within five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment. The first five year review is scheduled to occur in 2002.

Chuck Findley, Acting Administrator
Region 10

Date

CONCURRENCES				
Initials:				
Name:	Cami Grandinetti	Dave Croxton	Charlie Ordine	Mike Gearheard
Date:	7-11-00	7/11/00	7-11-00	7/12/00

Introduction

Site Name and Location:

The Kerr-McGee Superfund site ("the site") is located in Soda Springs, Idaho in Caribou County. A vicinity map is shown in Figure 1.

Lead and Support Agencies:

The U.S. Environmental Protection Agency (EPA) is the lead agency for this Superfund site, with the cooperation and support of the Idaho Division of Environmental Quality (IDEQ).

CERCLA Section 117 and NCP 300.435(c)(2)(ii):

In Section 117(c) of CERCLA, provisions are made for addressing and documenting changes to the selected remedy that occur after the ROD is signed. This Amended ROD documents the changes to the selected remedy in accordance with CERCLA Section 117. Additionally, since fundamental changes are being made to the original remedy, public participation and documentation procedures specified in the NCP Section 300.435(c)(2)(ii) have been followed.

Date of the Original Record of Decision (ROD):

The original ROD was signed on September 28, 1995.

Administrative Record:

This Amended ROD will become part of the Administrative Record file for this site, in accordance with Section 300.825(a)(2) of the NCP. The Administrative Record is available for review during normal work hours at the EPA Regional Office, 1200 Sixth Avenue, Seattle, Washington, 98101 and at the Soda Springs Public Library, in Soda Springs, Idaho.

Site History:

The Kerr-McGee Chemical Limited Liability Company (Kerr-McGee) operates a vanadium production plant in Caribou County about 1.5 miles north of Soda Springs, Idaho (population approximately 3,000) on the east side of State Highway 34 (see Figure 1). Kerr-McGee owns approximately 332 acres of industrial and agricultural land, which includes the plant facilities. The plant was constructed in 1963 and covers approximately 80 acres. The remaining 252 acres are used for agriculture. Prior to implementing the 1995 ROD, Kerr-McGee managed by-products and waste materials resulting from production operations in three unlined surface impoundment systems: the solvent extraction (S-X) pond system (which includes two settling ponds and the S-X pond), the scrubber pond, and the calcine tailings pond. Historically, industrial waste waters were discharged to unlined ponds on-site and infiltrated into the

underlying groundwater at a rate of 300 to 350 gallons per minute.

A Site Investigation was conducted at Kerr-McGee in April 1988. This investigation revealed groundwater contamination with hazardous substances, including arsenic, cadmium, chromium, lead and vanadium, as well as three organic compounds. These results lead to listing the site on the National Priorities List (NPL) of the most hazardous sites in the country in October, 1989. The Remedial Investigation/Feasibility Study for the site was conducted from approximately 1990 through 1994. These investigations revealed that human consumption of contaminated groundwater is the primary concern at the site. Groundwater contamination is the result of previous operational practices, such as discharging waste streams to unlined ponds, as well as massive failure of two of the containment facilities in the S-X raffinate system. Both of these failures involved ponds that did have some natural bottom-liner component. In April 1981, the S-X pond lost approximately 2.5 million gallons to groundwater from a hole in the bottom of the pond. In September 1989, one of the settling ponds was also discovered to have a hole in the clay lining in the bottom of the pond. On that occasion an estimated 650,000 gallons of raffinate was lost. The hole in the settling pond was repaired, but another 100,000 gallons of raffinate was discharged to groundwater from a similar failure in that same pond in November, 1989. After the November 1989 pond failure, an HDPE liner was installed in the settling pond.

A risk assessment was conducted at the site and groundwater was found to be contaminated with arsenic, molybdenum, vanadium, tributyl phosphate, managanese and total petroleum hydrocarbons at levels unacceptable for human consumption. Of these contaminants, molybdenum and vanadium contributed more than 80% to the groundwater risk. Since groundwater was identified as the primary pathway of concern, several alternatives were evaluated during the Feasibility Study to address groundwater contamination.

Samples of boiler blowdown water, roaster scrubber discharge, leached residue solids, and S-X raffinate were collected as part of the initial Remedial Investigation activities during January 1991. Analysis of samples indicated that processing wastes generated at the plant are not regulated as hazardous wastes under the Resource Conservation and Recovery Act (RCRA) regulations.

Kerr-McGee, through its own business decisions, planned to implement several plant operational changes to eliminate all liquid sources to groundwater. These voluntary efforts included building lined ponds for the S-X raffinate waste stream, eliminating the use of the scrubber pond by replacement with a baghouse, and operating a phosphoric acid plant to turn the calcine tailings waste into fertilizer through plant processes.

Groundwater modeling was conducted to assist in scoping the cleanup alternatives. The model addressed the contaminants of concern listed above and was primarily used to determine what impact the voluntary liquid source control would have on the levels of contamination found on site. The model also evaluated whether groundwater pumping, in addition to liquid source elimination, would significantly decrease the amount of time necessary for groundwater to

achieve cleanup goals.

Community Involvement:

The community received several Fact Sheets during the Remedial Investigation/Feasibility Study process that highlighted information on contamination, risk assessment, and groundwater modeling. The preferred alternative (as described below) was identified in the Proposed Plan published on August 1, 1995. No community members requested a public meeting and only one comment on the Proposed Plan was received. The commentor concurred with the proposed remedy.

On September 28, 1995, EPA signed a ROD that detailed the cleanup plan for Kerr-McGee. A draft Consent Decree and Remedial Design/Remedial Action Scope of Work were sent to Kerr-McGee on September 18, 1996. Following successful negotiations with Kerr-McGee, the Consent Decree was entered by the court on August 21, 1997.

Remedy Selected in the 1995 ROD:

The selected remedy primarily addresses groundwater contamination associated with the Kerr-McGee Chemical Corporation's (Kerr-McGee) activities. The primary goals of this remedial action are to prevent potential human exposure to groundwater contaminated with molybdenum, vanadium, arsenic, tributyl phosphate, total petroleum hydrocarbons, and manganese, and to restore groundwater to its beneficial use as a potential drinking water resource.

The selected remedy for contaminated groundwater includes elimination of uncontrolled liquid discharges from the site, which are the main source of groundwater contamination, recycling or containment of solid sources of contamination, groundwater monitoring, and institutional controls.

The remedy for groundwater specifically includes:

- Elimination of uncontrolled liquid discharges from the facility as soon as practicable;
- Excavation and reuse/recycling of impounded calcine tailings during the next eight years.
- Excavation and disposal of Solvent Extraction and Scrubber Pond solids into lined cells on-site;
- Semi-annual groundwater monitoring to determine the effectiveness of source control in achieving groundwater performance standards for the following contaminants of concern:

  Molybdenum

Vanadium
Manganese
Tributyl Phosphate
Total Petroleum Hydrocarbons
Arsenic

- Establishment of Institutional Controls (deed restrictions, limited access, well restrictions and/or well-head protection) in affected off-site areas to prevent ingestion of groundwater for as long as the groundwater exceeds the performance standards.

In addition to the selected remedy for groundwater, which addresses the principal risks posed by this site, the ROD included remedial actions to address two localized problems: potential human exposure to roaster reject materials stored above ground and migration of calcine tailings that have previously been windblown to surrounding land.

The selected remedial action for the roaster reject materials is resource reuse/recycling. The reuse/recycling aspect of the cleanup is the subject of this ROD amendment. The selected remedial action for windblown calcine tailings is excavation and disposal (which has been completed).

As part of the overall site strategy, though not part of the original selected remedy, Kerr-McGee developed and obtained an air permit from the Idaho Division of Environmental Quality to operate a fertilizer plant on site. In addition to the fertilizer plant, Kerr-McGee constructed new lined ponds to contain the main source of groundwater contamination (S-X raffinate).

Reasons For Issuing Amended ROD

Kerr-McGee has implemented most components of the 1995 ROD. All discharges to unlined ponds have been eliminated through reuse or the development of lined ponds for disposal. The subject of this Amended ROD is the reuse/recycling of calcine tailings and roaster rejects component of the selected remedy.

A phosphoric acid (fertilizer) plant was constructed to implement the reuse/recycling of calcine tailings and roaster rejects. This fertilizer/acid plant was intended to consume scrubber water and calcine tailings, as well as the roaster rejects, to produce phosphoric acid, ammoniated phosphate, and gypsum. Construction of the plant began in July, 1997 and the plant began operating in July, 1998.

Soon after the fertilizer plant began operating, several problems were encountered by Kerr-McGee. First, several structural and operational problems were identified. The scrubber system was originally constructed of stainless steel, which was discovered to be incompatible with a

waste stream that contained chloride. The system was replaced with a new system constructed from Hastalloy and fiberglass. A new rubber-lined stack was also installed and most of the ductwork was replaced with rubber-lined materials. Several pumps and fans have also been replaced.

Several problems with the chemistry involved in producing the fertilizer were encountered. It was discovered that there was a narrow range of acceptable amounts of sulfuric acid and water that could be added to the calcine materials. If additions of these compounds fell out of this acceptable range, a sticky material was produced, which stuck in the process equipment, chutes and other material transfer equipment. The sticky material had to be manually removed quickly, otherwise it hardened to the point that a jackhammer was required to get it off the equipment.

The ROD specified that the fertilizer plant must process 300 tons of calcine tailings and roaster rejects per day in order to meet the 8-10 year cleanup timeframe. According to production data at the fertilizer plant over the last two years, the fertilizer operation is unable to consistently meet this requirement. Because Kerr-McGee cannot meet these process requirements, EPA is requiring Kerr-McGee to implement an alternate remedy for the calcine tailings and roaster rejects.

As mentioned in the original ROD remedy selection section of this document, the intent of cleanup at Kerr-McGee was to achieve groundwater cleanup standards for molybdenum, vanadium, arsenic, manganese, total petroleum hydrocarbons and tributyl phosphate. With implementation of the other elements of the original selected remedy, concentrations of contaminants in groundwater are declining. Only molybdenum and vanadium are currently being detected on site at unacceptable levels. The other contaminants have dropped to near or below the risk based concentrations as a result of eliminating the disposal of liquid sources to the environment.

Analysis of Molybdenum and Vanadium:

According to the Remedial Investigation, molybdenum and vanadium contribute over 80% to the total site risks in groundwater. As part of the groundwater modeling effort conducted for the original ROD, it was estimated that the majority of the molybdenum (more than 85% of the total amount released during those years of operation) came from the solvent extraction system. The other liquid streams from Kerr-McGee processes accounted for the remainder of the molybdenum released. Virtually no molybdenum has been released from the calcine solids. The roaster reject pile is relatively small and does not contribute as much as the solvent extraction system.

The amount of vanadium released to the environment was also calculated in the original analysis. According to the Remedial Investigation, more than 90 percent of the vanadium released came from the liquid waste streams at Kerr-McGee. Approximately 2 percent of the vanadium has been released from the calcine tailings area.

The current groundwater monitoring results show that the molybdenum and vanadium can be found at concentrations above the ROD's risk based cleanup concentrations across the entire facility and at off-site wells, but that these concentrations are dropping at all locations. Graphs of concentration versus time for molybdenum and vanadium are included in Appendix A of this document.

Subject of ROD Amendment:

EPA has determined that an Amended ROD is necessary for this site. Modifications to the original remedy are necessary based on the information obtained during implementation of the original remedy and process changes. The recent groundwater data show a positive response to implementation of the response actions at the site. However, there is still a small contribution (approximately 2%) of vanadium to groundwater from the calcine tailings. The original remedy identified reuse/recycling of the calcine tailings in the fertilizer plant. Since there are serious operational problems with the fertilizer plant, it is essential to determine a different cleanup remedy for the calcine tailings.

In the original ROD for the site, the alternatives that were evaluated for the calcine tailings and roaster rejects cleanup were the following: no action, reuse/recycling, removal and capping in a lined facility, and capping in place. Based on the original investigation assessments, the calcine tailings contribute vanadium to groundwater contamination. Since vanadium is currently being detected in groundwater monitoring wells, the calcine tailings (as a source of vanadium contamination) should be addressed as part of the cleanup. Therefore, the no action alternative for the calcine tailings cannot be considered further.

The in-place capping option was evaluated in the original ROD and was determined to be effective at eliminating infiltration and leaching for calcine tailings and roaster rejects. Institutional controls would be required to prohibit activities on the capped area that could result in an unacceptable exposure to the contaminants of concern. Total costs for this alternative were expected to be $2,000,000.

Removal and capping of the tailings in a lined facility would involve construction of a landfill facility on-site, the excavation of approximately 700,000 tons of material, disposal, and closure of the landfill. According to the original evaluation that was conducted, the excavation and on-site disposal option was determined to be effective in reducing infiltration and eliminating that source to groundwater contamination. Institutional controls would be required to prohibit activities on the capped area that could result in an unacceptable exposure to the contaminants of concern. The evaluation also stated that the expected costs for this cleanup would be $10,000,000. In the evaluation, it was determined that in-place capping was similarly protective as the removal and capping alternative. Due to the large cost difference in these two capping options, the removal and capping alternative was not considered further in that evaluation process and will not be considered further here.

The reuse/recycling alternative, which was originally selected and partially implemented, will be eliminated from evaluation based on the problems with its implementation and its inability to meet cleanup production rates.

Based on the previous evaluations, this amendment documents a change in the remedy for the calcine tailings from reuse/recycling to in-place capping in combination with institutional controls restricting land use and continued groundwater monitoring. The long-term monitoring plan will be updated to monitor the performance of the capped calcine tailings area. Calcine tailings that have been staged at the fertilizer plant will be moved back to the calcine tailings impoundment area and capped with the rest of the materials. The roaster reject material, which was also to be processed in the fertilizer plant, will be capped with the calcine tailings. Fertilizer that has been processed, but which did not meet the product specifications, may also be capped with the calcine tailings and roaster reject, unless a market can be found for them. The processed fertilizer that will be capped with the calcine tailings and roaster rejects will not exceed 10,000 cubic yards of material.

The cap will consist of a linear low density polyethylene (LLDPE) liner placed on the calcine tailings, roaster reject and off-spec fertilizer. A geocomposite drain layer will be placed on top of the LLDPE. A soil cover will be placed on the geocomposite liner and the soil will be seeded. The total soil layer will be 3 feet thick.

Effects on Original Remedy From Implementation of Modifications

All of the remaining components of the original remedy, as documented in the September 28, 1995 ROD have been implemented.

Original Remedy	Modified Remedy
Excavation and reuse/recycling of buried calcine tailings during the next eight years.	Capping in place with monitoring and institutional controls
Excavation and disposal of Solvent Extraction and Scrubber Pond solids in lined and capped cells on-site;	No change from original
semi-annual groundwater monitoring to determine the effectiveness of source control in achieving groundwater performance standards for the following contaminants of concern: Molybdenum	No change from original

	Vanadium Manganese Tributyl Phosphate Total Petroleum Hydrocarbons Arsenic
Establishment of Institutional Controls (deed restrictions, limited access, well restrictions and/or well-head protection) in affected off-site areas to prevent ingestion of groundwater for as long as the groundwater exceeds the performance standards.	No change from original

Evaluation of Modified Remedy Against the Nine Criteria

Under SARA Section 121, a profile of the original selected remedy and the modified remedy against the nine criteria is required. A definition of each of the nine criteria with an evaluation of the original remedy and the modified remedy follow.

1. Overall protection of human health and the environment
This criterion addresses how well the alternative protects human health and the environment, both during and after construction. The modification to the remedy will not change the level of human health or environmental protection at the site. It has been presented in the original site analysis that the calcine tailings contribute negligible amounts of the contaminants remaining on site above Risk Based Concentrations, specifically molybdenum and vanadium. Capping the materials with a LLDPE liner will virtually eliminate any leaching of these contaminants to groundwater and the cleanup goals will still be met with this modified remedy. Institutional controls, to restrict land use at the site will ensure that the capped area is not disturbed.

2. Compliance with Regulations
This criterion addresses whether the remedial alternative meets all applicable and relevant and appropriate requirements (ARARs), or if not, justifies issuance of a waiver. The proposed modification from the original remedy will not change the remedy's ability to comply with all identified ARARs. No new ARARs are triggered due to the change in the remedy. The original remedy included capping as a cleanup component and the Environmental Protection and Health Act, Idaho Code 39-101-129, which regulates on-site disposal, was listed as an ARAR.

3. Long-term Effectiveness and Permanence
This criterion addresses how well the remedial alternative protects human health and the environment after cleanup goals have been reached and what, if any risks will remain at the site, and the adequacy and reliability of controls. The proposed modifications will not change the

long-term effectiveness of the remedy as long as the cap is maintained. The cap will provide an adequate impermeable surface so that the calcine tailings will no longer leach contaminants to groundwater through infiltration.

4. Reduction of Toxicity, Mobility or Volume

This criterion addresses whether the toxicity, mobility or volume of the hazardous substance is significantly reduced through treatment, to what degree are reductions expected, whether the treatment is irreversible, and what type and quantity of residuals will remain. The modified remedy, containment, will not reduce the toxicity, mobility or volume of hazardous substances through treatment. Reduction of toxicity and mobility with capping will occur through engineering controls. These engineering controls will reduce the mobility of the hazardous substances through capping with an impermeable liner. This liner will prevent contaminant leaching and migration to groundwater.

5. Short-term Effectiveness

This criterion addresses whether there are any potential adverse effects to either the community, site workers or the environment during construction or implementation of the remedial alternative, and how quickly the alternative reaches the cleanup goal. The original remedy prescribing reuse/recycling of the calcine tailings was projected to take approximately 8 years to complete. Under the modified remedy, the calcine tailings and roaster reject will be capped and the remedy will be complete within a year. This greatly reduces the timeframe for remedy implementation and therefore reduces the on-site workers' exposure to contaminants.

6. Implementability

This criterion addresses whether the remedial alternative is both technically and administratively feasible and whether the alternative has been used successfully on other similar sites. The original remedy has been shown to be less implementable than previously thought. The fertilizer plant has many operational problems that have affected Kerr-McGee's ability to recycle the calcine tailings according to the original schedule. Some of the fertilizer that has been produced at the plant is off-spec and useless since it cannot be sold. Therefore, this off-spec material will require proper disposal. The proposed modified remedy is implementable and has been proven successful at many other Superfund sites. Linear low density polyethylene caps are standard in the capping industry and pose no unique installation problems. Further, the off-spec fertilizer can be capped with the calcine tailings.

7. Cost

This criterion addresses the estimated present worth costs of the alternative. The cost for the fertilizer plant was not identified in the original ROD since it was a process change that Kerr-McGee was undertaking as part of doing business. In the feasibiltiy study, the projected cost for the fertilizer plant was $5 million. As mentioned above, costs to date at the plant have been $17 million. Kerr-McGee currently estimates the capping costs to be approximately $3 million. These costs do not include operation and maintenance costs associated with the cap. These costs

do include moving the off-spec fertilizer and the roaster reject materials to the calcine impoundment.

8. State Acceptance

This criterion addresses the state's comments or concerns about the modifications to the alternative, and whether they support or oppose the changes. The State of Idaho, Department of Environmental Quality has written a letter in support of EPA's proposed amendment to the ROD.

9. Community Acceptance

This criterion addresses the community's comments and concerns about the modifications, and whether the community generally supports or opposes the proposed changes. The Proposed Plan was mailed to community members on April 20, 2000. The public comment period was held from April 23 to June 23, which included a 30 day extension, based on community requests. A public meeting was held in Soda Springs on June 1, 2000. The Responsiveness Summary (attached) includes the public comments received during the public comment period and the public meeting, as well as EPA's response to those comments.

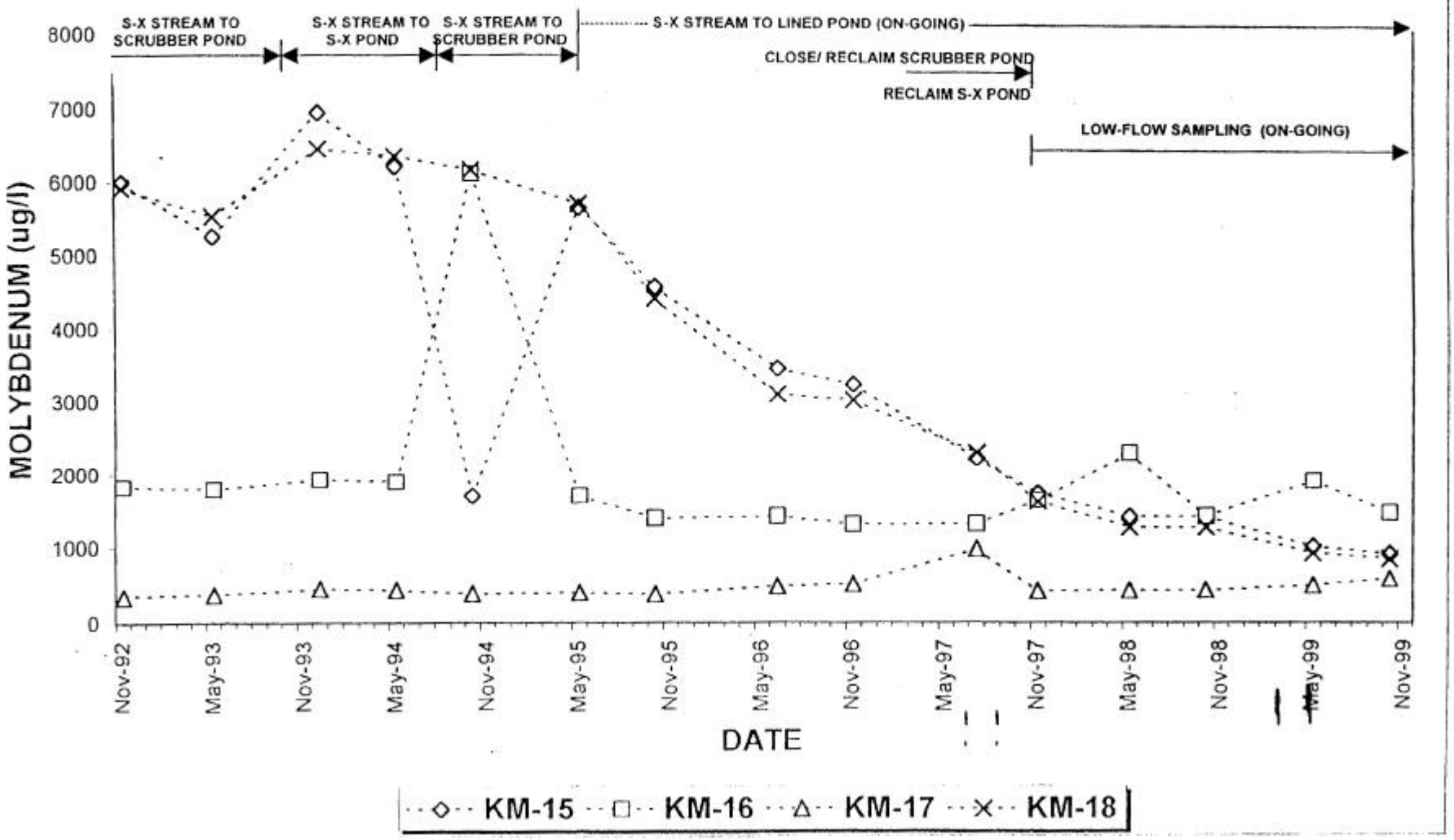
Statutory Determinations

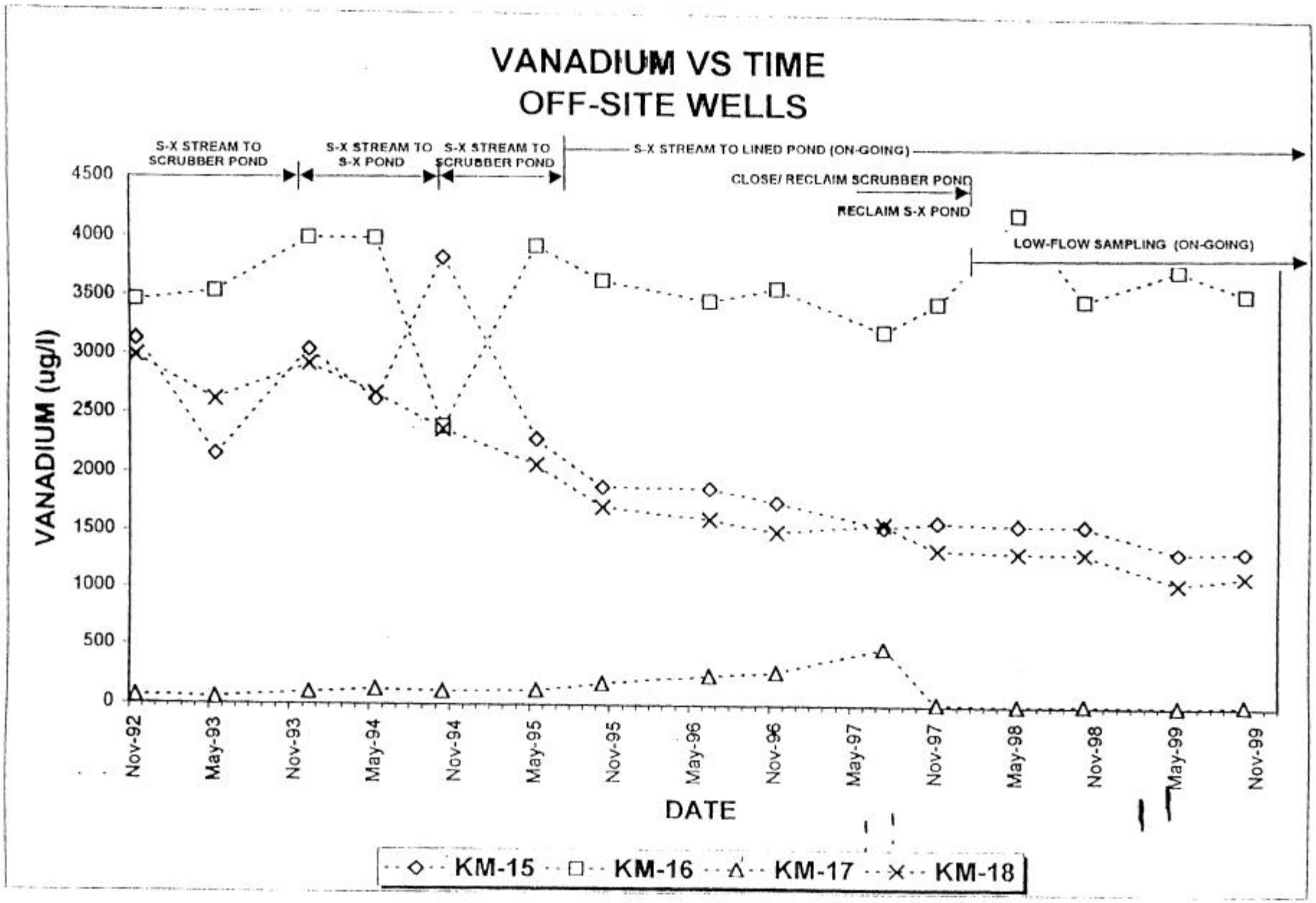
Considering the new information that has been developed and the modifications that have been made to the selected remedy, the lead and support agencies believe that the remedy remains protective of human health and the environment, complies with all ARARs identified in the original ROD, is cost-effective and uses permanent solutions and treatment to the maximum extent practicable.

Appendix A

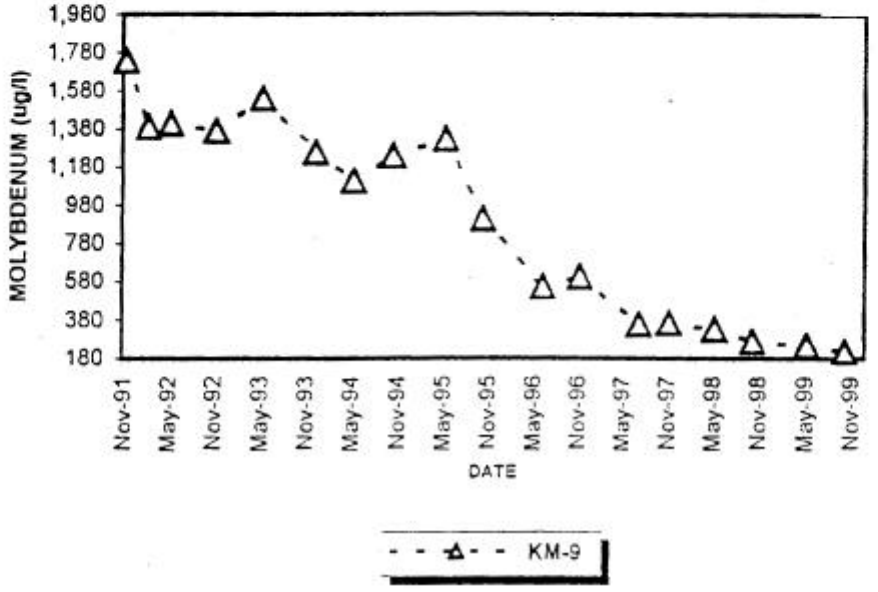
Molybdenum and Vanadium Contaminant Concentrations Versus Time

MOLYBDENUM VS TIME
OFF-SITE WELLS

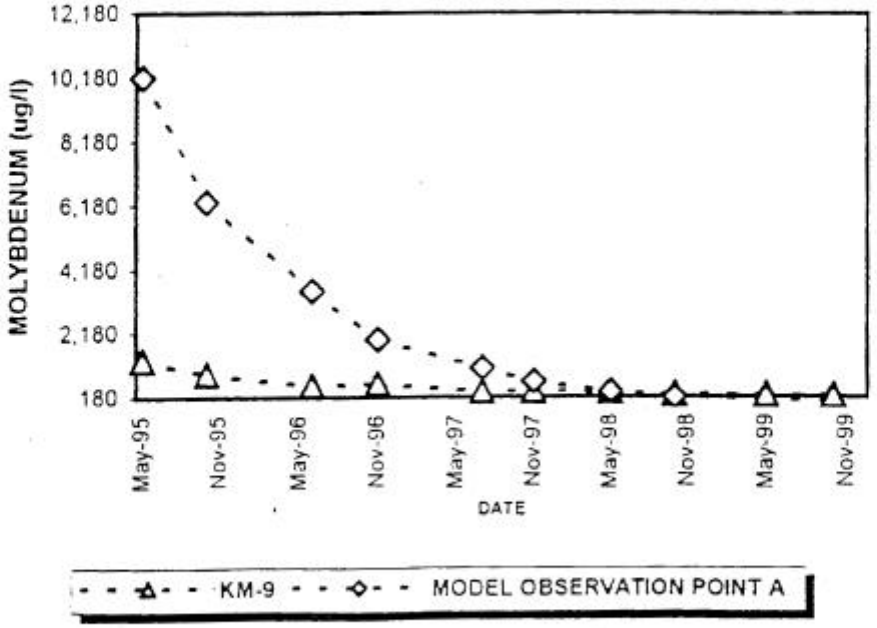



VANADIUM VS TIME
OFF-SITE WELLS
S-X STREAM TO SCRUBBER POND
S-X STREAM TO S-X POND
S-X STREAM TO SCRUBBER POND
S-X STREAM TO LINED POND (ON-GOING)
CLOSE/ RECLAIM SCRUBBER POND
RECLAIM S-X POND
LOW-FLOW SAMPLING (ON-GOING)
VANADIUM (ug/l)
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Nov-92
May-93
Nov-93
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
May-98
Nov-98
May-99
Nov-99
DATE
KM-15
KM-16
KM-17
KM-18

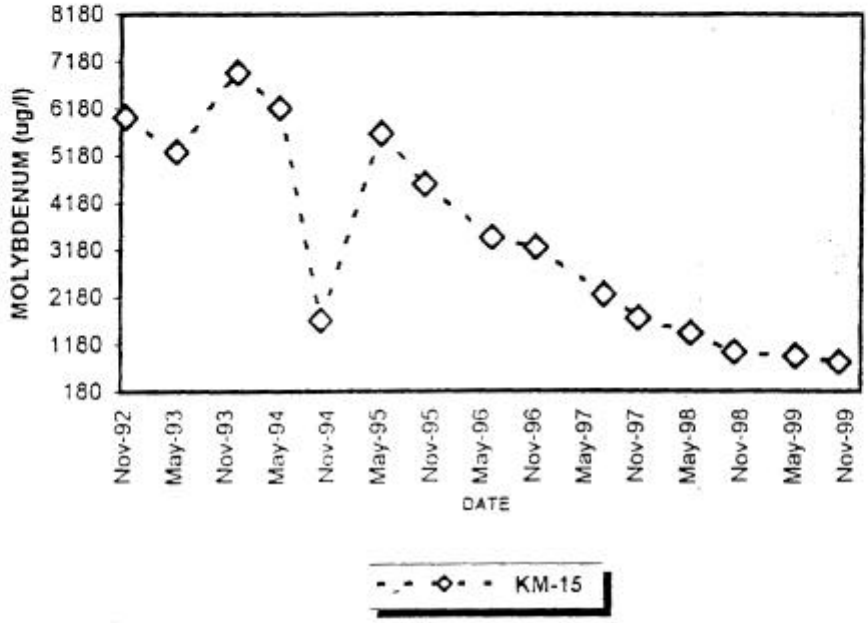
MOLYBDENUM VS TIME
WELL KM-9 AT SOUTHWEST CORNER OF PLANT FACILITY



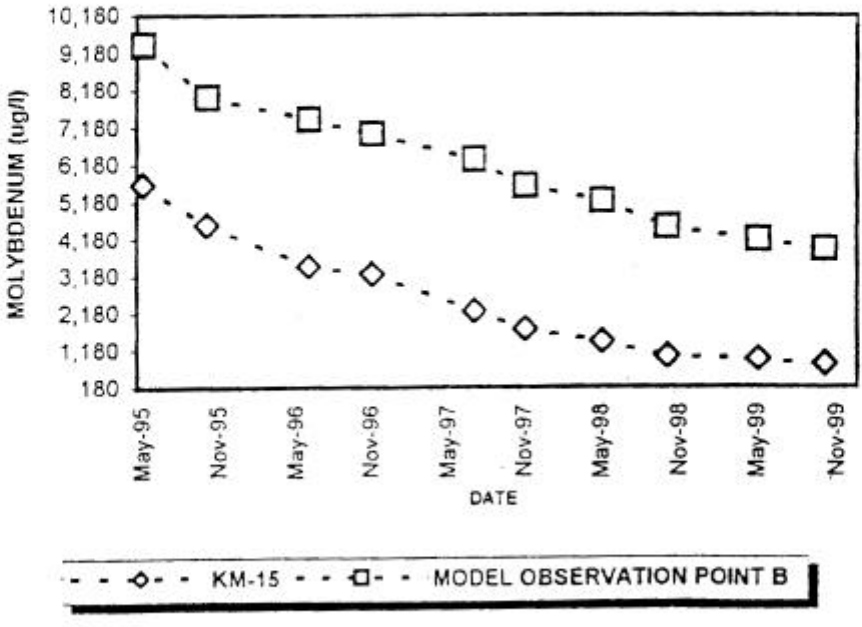
MOLYBDENUM WITH TIME
AND 1995 MODEL PREDICTIONS



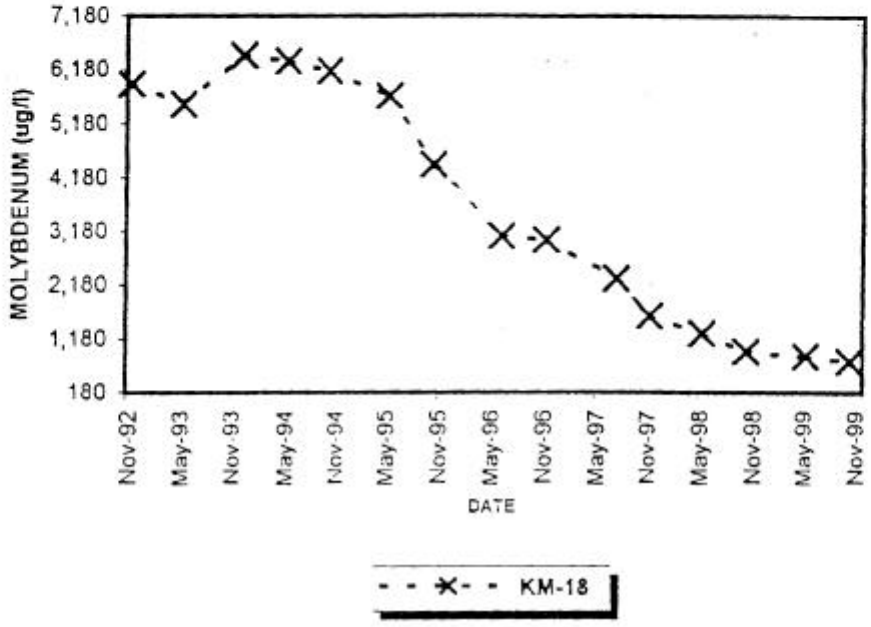
MOLYBDENUM VS TIME
OFF-SITE WELL KM-15



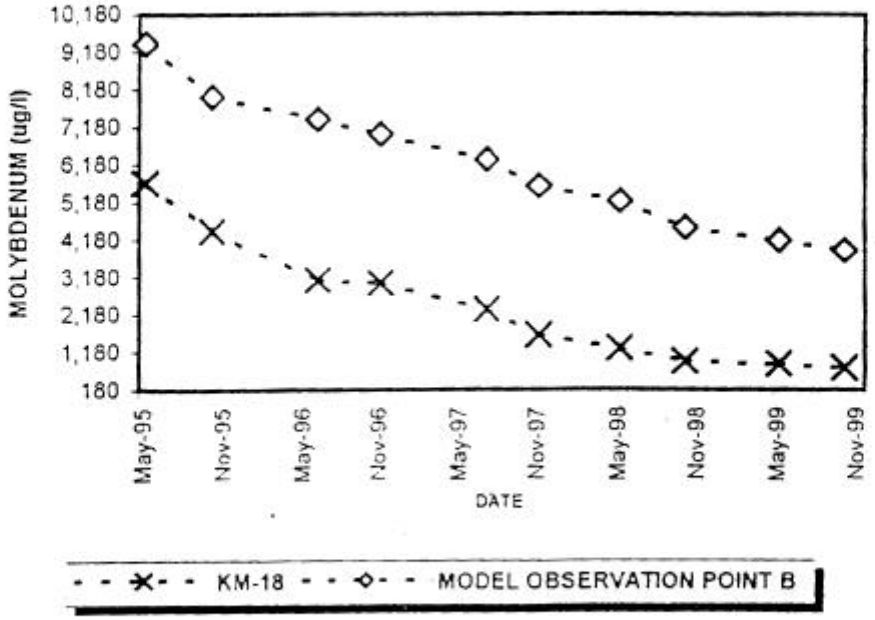
MOLYBDENUM TRENDS WITH TIME
AND 1995 MODEL PREDICTIONS



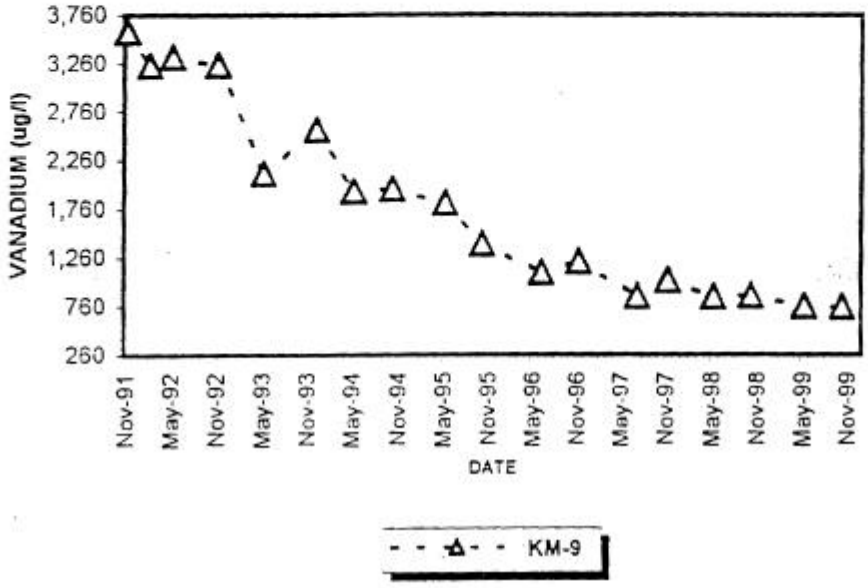
MOLYBDENUM VS TIME
OFF-SITE WELL KM-18



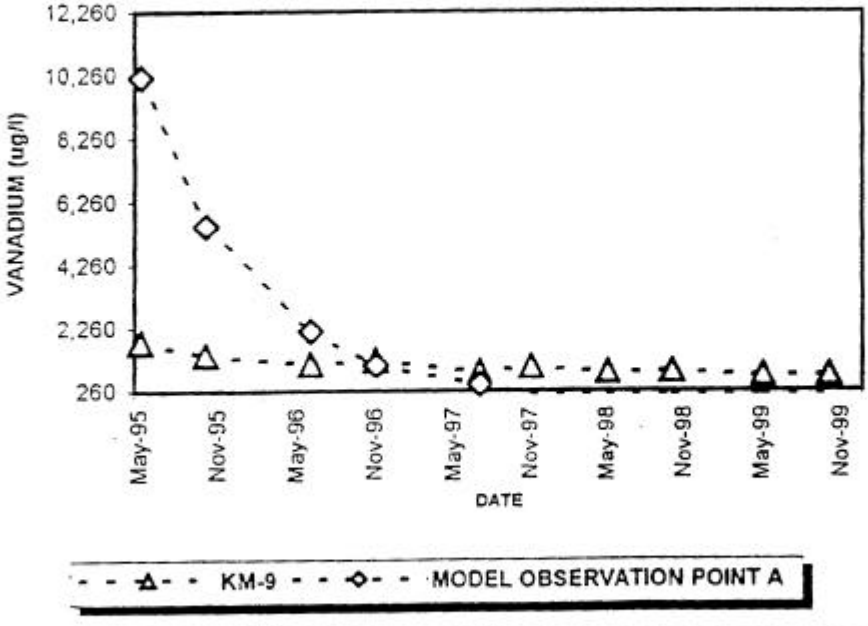
MOLYBDENUM WITH TIME
AND 1995 MODEL PREDICTIONS



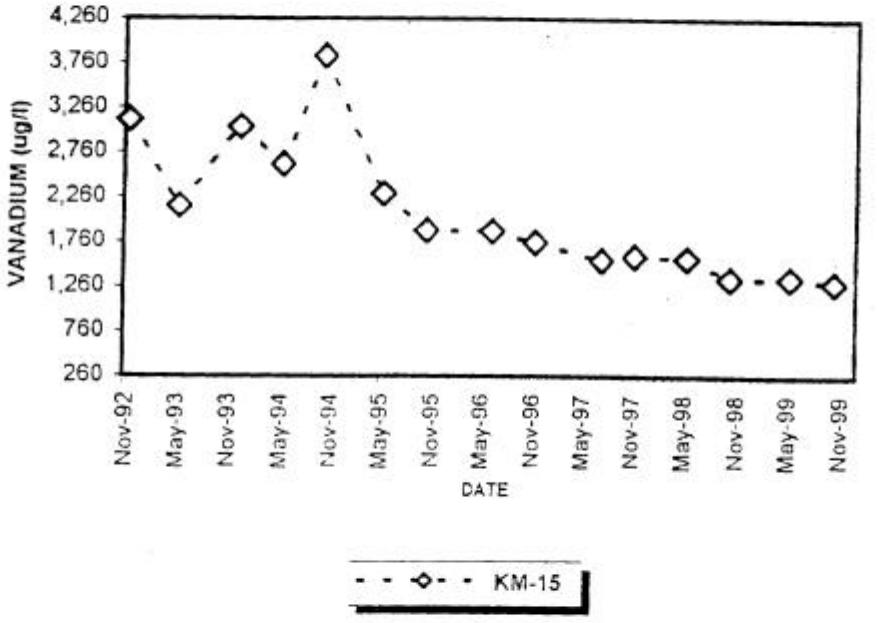
VANADIUM VS TIME
WELL KM-9 AT SOUTHWEST CORNER OF PLANT
FACILITY



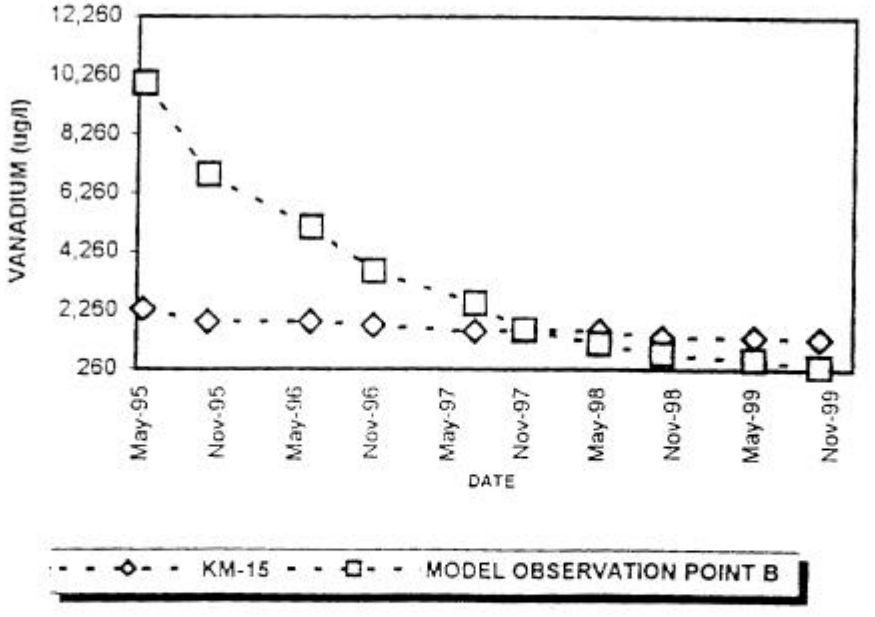
VANADIUM WITH TIME
AND 1995 MODEL PREDICTIONS



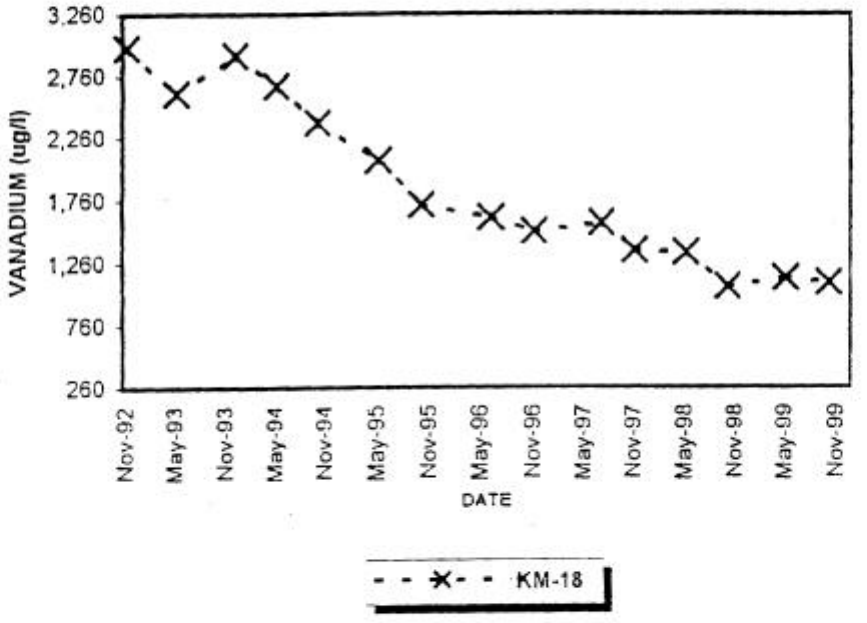
VANADIUM VS TIME
OFF-SITE WELL KM-15



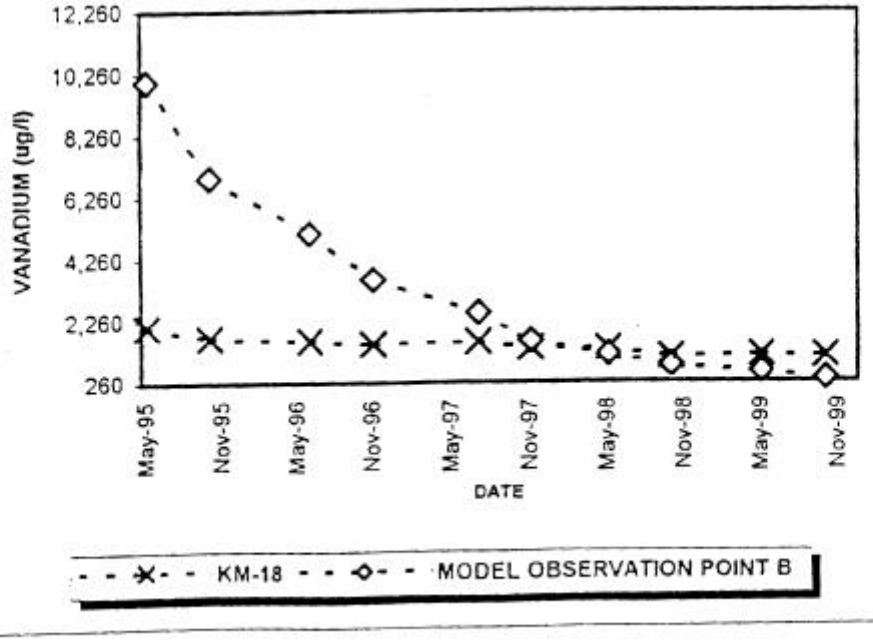
VANADIUM TRENDS WITH TIME
AND 1995 MODEL PREDICTION



VANADIUM VS TIME
OFF-SITE WELL KM-18



VANADIUM TRENDS WITH TIME
AND 1995 MODEL PREDICTIONS



Responsiveness Summary

Kerr-McGee Superfund Site

Calcine Tailings ROD Amendment

The responsiveness summary addresses public comments on the proposed change to the 1995 Record of Decision (ROD) for the Kerr-McGee Superfund Site. The Proposed Plan was issued on April 21, 2000, and a public comment period was held from April 21, 2000 to June 23, 2000. In response to community interest, a public meeting was held in Soda Springs, ID on June 1, 2000 to discuss the Proposed Plan and to accept oral and written comments from the public. Thirty-seven people attended the public meeting.

EPA received five formal written comments on the Proposed Plan. In addition, ten oral comments were made at the public meeting that became part of the transcript from the meeting. Each of the fifteen comments received is summarized below, followed by EPA's response to the comment. Original text of the comments is publicly available as part of the Administrative Record for the Kerr-McGee Superfund Site. The Administrative Record is located in the Soda Springs Public Library.

Oral comments received at the June 1, 2000 public meeting:

Comment: Doug Tanner from the State of Idaho Division of Environmental Quality (DEQ) expressed support for the *Capping in Place* proposal based on the information he had received and reviewed at the time. However, he also noted that DEQ had not completed its review of the proposal, and an official statement would not be made until they had an opportunity to complete their review and assess the comments received during EPA's public comment period.

EPA Response: Statement noted.

Comment: Carol Davids-Moore, County Commissioner for Caribou County District #1, expressed a need for more information about the proposal. She also read from a letter submitted by the Caribou County Commissioners to EPA requesting an additional public hearing and an extension to the comment period.

EPA Response: EPA seriously considers requests for extensions and additional public meetings. In evaluating this request, EPA considered its effort and involvement with the public at the Kerr-McGee Superfund Site.

The Proposed Plan was issued to the public on April 21, 2000, and the original public comment period was scheduled to end on May 23, 2000. After receiving a request for extension, EPA extended the public comment period another 30 days to June 23. In response to written requests, EPA held a public meeting on June 1, 2000 in the City of Soda Springs at which EPA registered 37 attendees and 10 official public comment speakers. By mail, EPA has received five letters with questions or statements.

EPA is interested in continuing to work with the public on the Kerr-McGee site. At this time, there does not appear to be any new information that would warrant holding another meeting or further extending the comment period. EPA has been working with the City Council and County Commissioners to resolve any outstanding concerns, and both have since retracted their request for an additional public meeting. EPA will continue to inform the public about ongoing monitoring and activities at Kerr-McGee.

Comment: The speaker expressed support of the *Capping in Place* proposal. The speaker also noted that it would take additional time to implement another proposal as opposed to the immediate remedy of *Capping in Place* and stressed the importance of completing the job soon.

EPA Response: EPA agrees that Capping in Place is an effective solution that could be completed in less time than other options but still be equally protective.

Comment: The speaker expressed a concern about the long-term reliability and risk to the community by leaving the calcine tailings at the facility.

EPA Response:

EPA shares those concerns and does evaluate the long-term effectiveness of remedy alternatives. The *Capping in Place* alternative is a proven technology that will be an effective long term solution for preventing groundwater contamination from the calcine tailings. In addition, EPA and the State will work with Kerr-McGee during the design, construction and long-term monitoring of the capped tailings to ensure that the remedy is constructed appropriately and remains effective in the future.

Comment: The speaker raised several concerns about the proposal to change the cleanup remedy at the site. The first concern addressed the reason why EPA decided to change the cleanup remedy, and whether or not that decision was based on economic losses to Kerr-McGee resulting from the operation of the fertilizer plant. The second concern referenced the close proximity of the historic Formation Creek drainage to the calcine ponds and its relationship to Ledge Springs. The speaker suggested that independent geological and hydrological studies should be done by contractors that have not been hired by Kerr-McGee. The third concern raised by the speaker was about the long-term responsibility and liability for maintaining and monitoring the capped calcine tailings.

EPA Response: The speaker's comments touched on several issues. The first is whether the reason for changing the remedy for the calcine tailings from *Reuse/Recovery* in the fertilizer plant to *Capping in Place* was based on economics. While it is true that Kerr-McGee was operating the fertilizer plant at a loss, EPA would like to point out that environmental cleanup such as this, is rarely a profitable enterprise. The important fact that EPA considered when identifying the need for a change is remedy is that Kerr-McGee was unable to meet the cleanup schedule that had been agreed to in the 1995 Record of Decision. Kerr-McGee operated the fertilizer plant for two years, making changes and upgrades, but were unable to demonstrate an ability to meet the required production rate on a consistent basis over the long-term. At the average rates demonstrated, cleanup of the waste piles would have taken much longer than the eight year

timeline required in the original plan. Therefore, EPA began working with Kerr-McGee on changing the remedy.

The second point made by the speaker concerns subsurface spring flows through or around the calcine tailings. The speaker expressed concern that EPA had not performed independent analysis of the hydrogeology in the area. EPA does not typically perform this kind of independent work unless the potentially responsible party, such as Kerr-McGee in this case, refuses to do the work, doesn't demonstrate the ability to do the work, or unless EPA doesn't agree with the approach that the party is taking. EPA has overseen Kerr-McGee's work at the site, which means we have had hydrogeologists, engineers and other technical experts review Kerr-McGee's work plans and sample results. Kerr-McGee has been responsive to EPA's comments on their work and has voluntarily performed the work required by EPA. At this time, the technical information does not indicate that any springs run through or near the calcine tailings. However, long-term monitoring will be used to evaluate the performance of the cap and identify any changes in the area, such as a recurrence of historical drainage patterns that could come into contact with the calcine tailings.

The speaker's third point raises concerns about the future liability and responsibility that Kerr-McGee has for maintaining and monitoring the capped calcine tailings. Kerr-McGee has a legal agreement with EPA, which requires maintenance and monitoring of the waste pile as long as the waste remains at the site. Also included in that legal agreement is a financial assurance clause that Kerr-McGee must satisfy every year. According to this financial assurance clause, Kerr-McGee must demonstrate each year that they have $1,000,000 available for the environmental work at their Soda Springs plant. In the unlikely event that Kerr-McGee is unable to pay for any required actions, EPA and the State would assume liability of the site and ensure all necessary measures continue to be taken to protect the community.

Comment: The speaker spoke in support of the *Capping in Place* proposal and long-term groundwater monitoring program at the site.

EPA Response: Statement noted.

Comment: The speaker spoke in support of EPA and Kerr-McGee working together, along with cooperation and trust from the community, to solve this issue.

EPA Response: Statement noted.

Comment: The speaker expressed concern about leaving the waste in place under the *Capping in Place* proposal. The speaker suggested that if the waste could not continue to be recycled through the fertilizer plant, then it should be completely removed from the site and placed in a designated waste landfill.

EPA response: In the original remedy selection in 1995, the *Capping in Place* alternative was evaluated and was the second choice behind *Reuse/Recycling*. The original evaluation revealed that capping the calcine tailings in place provided similar protection to human health and the

environment as removing the materials to an off-site landfill, at a significantly lower cost. Because of the large cost difference, with no added protection to human health or the environment, EPA did not consider removing the calcine tailings any further. It is important to stress that placing the tailings in a separate facility has no added benefit to human health or the environment over capping the materials in place. EPA has implemented similar capping technologies at many other Superfund sites around the country with predictable success. Additionally, the long-term monitoring program at the site will ensure that the cap is working properly to protect groundwater in the area.

Comment: The speaker spoke in support of the *Capping in Place* proposal, citing minimal risk to groundwater associated with the calcine tailings.

EPA Response: EPA agrees that the major environmental risks at Kerr-McGee have been addressed through already completed cleanup actions. Those actions eliminated the discharge of approximately 350 gallons per minute of contaminated process water to unlined ponds. Additionally, the scrubber pond and solvent extraction solids were consolidated and capped on site. EPA also agrees that capping the calcine tailings will be effective in handling that source of contamination to groundwater.

Comment: The speaker spoke in favor of the *Capping in Place* proposal.

EPA Response: Statement noted.

Written Comments Received by EPA

EPA received 5 letters with comments. Two of the letters came from the City Council and Caribou County Commissioners. The letters had identical requests for an extension to the public comment period and another public meeting. The letter from the County was read at the public meeting on June 1 by Carol Davids-Moore. Please find EPA's response to these requests under Carol Davids-Moore's oral comment addressed above.

Comment: The comment letter requested that EPA consider earthquake effects on the capped calcine tailings.

EPA Response: EPA will work with Kerr-McGee to ensure that the cap is designed to consider earthquake loading. Further, EPA is required by law to continually evaluate the effectiveness of the cap and ensure that it remains protective of human health and the environment.

Comment: A comment letter came from a landowner located southwest of the Kerr-McGee facility. This landowner has a drinking water well that is located near Big Spring. Since Big Spring is showing elevated levels of molybdenum during the biannual sampling, the homeowner was concerned about the quality of his drinking water, as well as that of his three neighbors.

EPA Response: Since these four wells have not previously been sampled, EPA requested that

Kerr-McGee sample the wells. At this writing, Kerr-McGee has sampled the four wells and are waiting for the lab results. EPA has contacted the concerned landowner and discussed the molybdenum contamination in groundwater. The calcine tailings, which are the subject of this remedy change, are not a source of molybdenum contamination. The source of molybdenum at the facility was in other waste streams and waste piles that have since been addressed and are no longer contributing to groundwater contamination. EPA will work with the homeowners when the sample results come back from the lab to determine the extent, if any, of the contamination in their drinking water and necessary next steps.

Comment: The comment letter supported the *Capping in Place* proposal. Further, the letter supported the City in their request to have Kerr-McGee sample Ledger Spring.

EPA Response: Ledger Spring was sampled during the original investigations and no contaminants were detected at levels of concern at that time. Since EPA received the request for additional sampling, EPA has requested that Kerr-McGee sample Ledger Spring again. Kerr-McGee has since sampled the Spring and are waiting for results from the lab. When those results are received, EPA will make them, available to the City and to the public in the information repository located at the Soda Springs Public Library.

STATE OF IDAHO
DIVISION OF
ENVIRONMENTAL QUALITY

224 South Arthur • Pocatello, Idaho 83204-3202 • (208) 236-6160

Dirk Kempthorne, Governor
C. Stephen Allred, Administrator

July 13, 2000

Mr. Chuck Findley
Acting Regional Administrator
U.S. Environmental Protection Agency, Region 10
1200 6th Ave.
Seattle, Washington 98101

SUBJECT: State of Idaho Concurrence on the Kerr-McGee Superfund Site Record of Decision Amendment, Soda Springs, Idaho

Dear Mr. Findley:

The Idaho Department of Environmental Quality (DEQ) has evaluated the proposed amendment to the Record of Decision for the Kerr-McGee Superfund site in Soda Springs, Idaho. We concur that capping the calcine tailings will be an effective remedy that is protective of human health and the environment.

Our concurrence is predicated upon the understanding that EPA will ensure that Kerr-McGee Corporation conducts the required maintenance of this remedy, and in the event of a change in ownership of the facility, that EPA will require that the maintenance responsibility will continue to ensure the effectiveness of the remedy without a reliance upon State funding or resources.

We have evaluated the public comments and believe the public is supportive of the proposed amendment. The DEQ looks forward to working with EPA in reviewing the design and oversight of the remedy construction. Please contact Doug Tanner at (208) 236-6160 if you have any questions or concerns.

Sincerely,

for

C. Stephen Allred, P.E.
Administrator

C: Doug Tanner, DEQ
Dean Nygard, DEQ
Cammi Grandinettie